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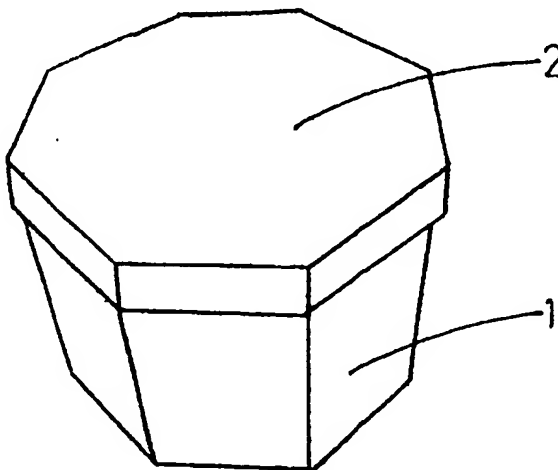
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **VACUUM CLEANER PACKAGE**



(57) Abstract: The present invention relates to a package for a vacuum cleaner, such as a robotic vacuum cleaner (5), which package comprises an outer casing (1) with a bottom and one or several significantly vertical and stiff side walls and one detachable lid that is significantly parallel with the bottom. The outer parts of the lid together surrounds the parts of the side walls closest to the lid. The package also comprises a supporting device (6, 7) with at least one lower part shaped to carry and partly fix the vacuum cleaner (5) in relation to the casing (1) when it rests in a first position significantly on and above the lower part resting on the bottom. The package also comprises at least one upper part (6, 7), shaped as when it rests in an upside position significantly on and above the vacuum cleaner resting in its first position, it contributes to further fix the vacuum cleaner in relation to the casing (1). In order to solve the above mentioned disadvantages the present invention relates to a package in which the upper part (6, 7) is shaped so as when the package content, such as an vacuum cleaner (5), rests in a second position at least in part on and above the upper part the

Vacuum cleaner package

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Technical area

The present invention relates to a package for a vacuum cleaner, such as a robotic vacuum cleaner, which package comprises an outer casing with a bottom and one or several significantly vertical and stiff side walls and one detachable lid that is significantly parallel with the bottom. The outer parts of the lid are significantly parallel with the side walls and together surrounds the parts of the side walls closest to the lid. The package also comprises a supporting device with at least one lower part shaped to carry and partly fix the vacuum cleaner in relation to the casing when it rests in a first position significantly on and above the lower part resting on the bottom. The package also comprises at least one upper part, shaped as when it rests in an upside position significantly on and above the vacuum cleaner resting in its first position, it contributes to further fix the vacuum cleaner in relation to the casing.

Background

During the past packages has been developed which purpose has been to safely protect and store fragile goods, such as electrical vacuum cleaner. The packages are designed to protect the goods from such things as dust and water. Furthermore, the goods have been protected from damage during transports. In order to achieve such advantages several types of constructions has been used.

US5857574 illustrates a package for fragile goods such as eggs. Its purpose is, except from protecting the content, to display the shape of the egg for the consumer. The package is therefore partly shaped as the content. It also has a separate panel placed on and above the shaped with an opening through which the part can be spotted. The opening of the panel is shaped so that the part party can point out through the opening.

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FR2761961 illustrates a package for the storage and display of bottles of different size. The package contains compartements in which the bottles are placed. In each compartement there is a support for catching the neck of the bottle in order to fix the

bottle. The support is shaped in the same material as the rest of the package and partly protects the bottle from shocks.

5 US4181220 shows another solution for fixing the content of a package and at the same time make it possible to demonstrate it. The inner package consists of a support with grooves in order to enclose part of the content and position it in a suitable way inside the package.

10 US4155445 shows another solution in order to fix and demonstrate the content of a package. The package has an upper and a lower device in order to support the content, The upper device has a U-shaped recess and the lower part has a V-shaped recess in order to fix the content.

15 A disadvantage with regular packages is that the purpose of the package often is just to protect its content. It is therefore a desire to design a package which apart from store and protect its content makes it possible to demonstrate the content by using the package, which has been solved by some of the disclosed packages. Another disadvantage with the present packages are also that they are often worn out when the content is unpacked. It is therefore also a desire to design a package for unpacking and packing. Another
20 disadvantage with present packages, as here disclosed, is that they do not enable the possibility to position the content in at least one second secure and fixed position in relation to the package. Such a second position should be enabled by the package in order to secure and fix the content in relation to the package. It is therefore a main object of the invention to achieve a package construction, which solves the above-mentioned
25 disadvantages

Summary of the invention.

In order to solve the above mentioned disadvantages the present invention relates to a package as disclosed in the first section in which the upper part is shaped so as when the
30 package content, such as an vacuum cleaner, rests in a second position at least in part on and above the upper part the vacuum cleaner is partly fixed in relation to the casing. At least parts of the upper part rests in a lower position on and above the lower part which rests on the bottom.

Description of the drawings

The invention will be described in form of a preferred embodiment by referring to the accompanying drawings, in which:

5

Fig. 1 demonstrates a perspective view of a package with a detachable lid.

Fig. 2 demonstrates a view from above of the package according to fig. 1 where the lid and parts of the content has been removed.

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Fig. 3 demonstrates a perspective view of the package according to fig. 1 with only the lid removed.

Fig. 4 demonstrates a perspective view of the package according to fig. 3 with the content positioned and displayed in an alternative position.

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Fig. 5 shows a perspective view of one of the upper parts of the package according to fig. 3 in an upper position orientation.

Fig. 6 shows a perspective view of one of the upper parts of the package according to fig. 3 in a lower position orientation.

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Fig. 7 shows a perspective view of the lower part of the package according to fig. 2.

Fig. 8 shows a perspective view of the lower part of the package according to fig. 7 from another side.

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Description of an illustrative embodiment

Figure 1 demonstrates an outer casing 1 which consists of 8 vertical side walls, a bottom and a detachable lid 2. The outer parts of the lid are substantially parallel with the side walls. In this embodiment, the casing has eight walls by which together forms a symmetric octahedral, but as an alternative the casing could have fewer walls or another shape. The design of the outer casing does not by itself contribute to the scope of the invention. The casing is preferably made in a stiff material such as cardboard or plastic.

30

In figure 2, the lid has been removed. On the bottom inside of the casing, a lower part 3 of a supporting device in a shock absorbing material is placed (see also fig. 7 – 8). The lower part has flat underside that covers the whole bottom of the package and substantially vertical side walls that contributes with the inner side walls of the casing 1 in order to partly fix the lower part inside the casing. An accessory 4 can be mounted in a recess 15 shaped 16 to fix it in relation to the lower part.

Figure 3 shows a vacuum cleaner 5 in form of a circular shaped robotic vacuum cleaner positioned in a horizontal position on and above the lower part 3 disclosed in fig. 2,7 and 8. On and above, also partly surrounding the vacuum cleaner are two upper parts 6,7 of the supporting device positioned, also made in a shock absorbing material. The two upper parts rests on and above the lower part and together with this and the vacuum cleaner fills almost the whole casing 1. The upper parts placed in an upper position on and above the vacuum cleaner supports the lower part 3 in order to fix the vacuum cleaner in relation to the casing 1.

It is possible to remove the two upper parts 6,7 of the support device without having to move the vacuum cleaner. By doing that the vacuum cleaner is reachable in order to be displayed or removed from the package. See also fig. 5-6.

In fig. 4 the vacuum cleaner 5 is placed in a second, leaning position above the upper parts 6,7. The two upper parts are placed under the vacuum cleaner, one of them turned upside down, where they rests on and above the lower part 3. The vacuum cleaner 5 positioned as this thereby is displayed in a leaning, partly fixed position by the package. As an alternative, the vacuum cleaner can be placed in a horizontal, fixed position on and above the upper parts by also turning the other part upside down.

In figure 5 and 6 the two upper parts 6,7 are shown. The two parts has a uniform shape. It is of course possible to design the parts differently as long as they solves the problem defined in the application is a similar way, which is to store and display a vacuum cleaner in a fixed safe matter.

The upper parts 6,7 are designed to partly surround and thereby fix the vacuum cleaner 5 positioned in the first position, as shown in figure 3. By turning either one of them

Therefore, the parts have flat topside so that they can rest on the lower part 3. Furthermore, the upper parts have a recess 9 in order to catch up, fix the vacuum cleaner in all of its disclosed positions, and partly surround it. The upper part also has a recess 10 in order to achieve a space on top of the vacuum cleaner for instruction manuals or similar. These recesses also forms handles 11 in order to simplify for the user to remove them.

In figure 7 and 8, the shape of the lower part 3 is shown. The part has an underside 12 with several perforatings 13. The purpose of this part is that by designed supports 14 carry and partly fix an accessory 4 for the vacuum cleaner, for example a charge station. The package partly surrounds the horizontal cross-section of the vacuum cleaner. The accessory rests on shelves 15 and is fixed by locking means 16. The lower part to fit inside the outer casing 1 and therefore in this embodiment has eight side walls.

The embodiment described above is merely given as an example, and it should be understood that the present invention is not limited thereto. Further modifications, changes and improvements, which retain the basic underlying principles disclosed and claimed herein, are within the scope and spirit of the invention.

Patent Claims

1. A package for a vacuum cleaner, such as a robotic vacuum cleaner (5), which package comprises an outer casing (1,2) with a bottom and one or several significantly vertical and stiff side walls and one detachable lid (2) that is significantly parallel with the bottom, of which the outer parts of the lid together surrounds the parts of the side walls closest to the lid (2), which package also comprises a supporting device (3,6,7) with at least one lower part (3) shaped to carry and partly fix the vacuum cleaner (5) in relation to the casing (1) when it rests in a first position significantly on and above the lower part (3) resting on the bottom, and with at least one upper part (6,7) shaped as when it rests in an upside position, significantly on and above the vacuum cleaner resting in its first position, it contributes to further fix the vacuum cleaner in relation to the casing (1,2), **characterized in** that the upper part (6,7) is shaped so as when the vacuum cleaner (5) rests in a second position, at least in part on and above the upper part (6,7), the vacuum cleaner (5) is partly fixed in relation to the casing (1,2), which upper part (6,7) in part rests in a lower position on and above the lower part (3) resting on the bottom.
2. A package according to claim 1 **characterized in** that the lower part (3) is in one piece and shaped as to from down under and from the sides support the vacuum cleaner (5) when it rests in the first position, which lower part (3) comprises a recess (15) positioned under the vacuum cleaner (5) and shaped (16) as to fix an accessory (4) in relation to the casing (1), which lower part (3) is also shaped to surround a part of the horizontal cross-section of the vacuum cleaner (5).
3. A package according to any of the claims 1 – 2 **characterized in** that the upper part (6,7) consists of two upper detachable parts (6,7) shaped in relation to the vacuum cleaner (5), which upper parts (6,7) when resting in the upper position together surrounds a part of the horizontal cross-section of the vacuum cleaner (5).
4. A package according to claim 3 **characterized in** that the two upper parts (6,7) are uniform and when resting in the upper position are positioned significantly on each side of the vacuum cleaner (5) so that they can be removed without any need to move the vacuum cleaner (5).
5. A package according to any of the claims 3 – 4 **characterized in** that the two

lower position the vacuum cleaner (5) resting in its second position is partly fixed in a horizontal or leaning position.

5 6. A package according to any of the claims 3 – 5 **c h a r a c t e r i z e d i n** that the two upper parts (6,7) are shaped (10) so as when they rest in the upper position they creates an open space on the upside of the vacuum cleaner (5).

10 7. A package according to any of the earlier predefined claims **c h a r a c t e r i z e d i n** that the supporting device (3,6,7) and/or the outer casing (1,2) is made in cellular plastic or cardboard.

15 8. A package according to any of the earlier predefined claims **c h a r a c t e r i z e d i n** that the outer casing (1,2) comprises at least five significantly plane and vertical side walls.

9. A package according to claim 8 **c h a r a c t e r i z e d i n** that the outer casing (1,2) comprises eight plane side walls that together shapes a symmetric octahedral

20 10. Use of a package according to any of the claims 1 – 9 in order to display and fix an electrical vacuum cleaner, such as a robotic vacuum cleaner, in relation to the casing (1,2) in at least two different positions.

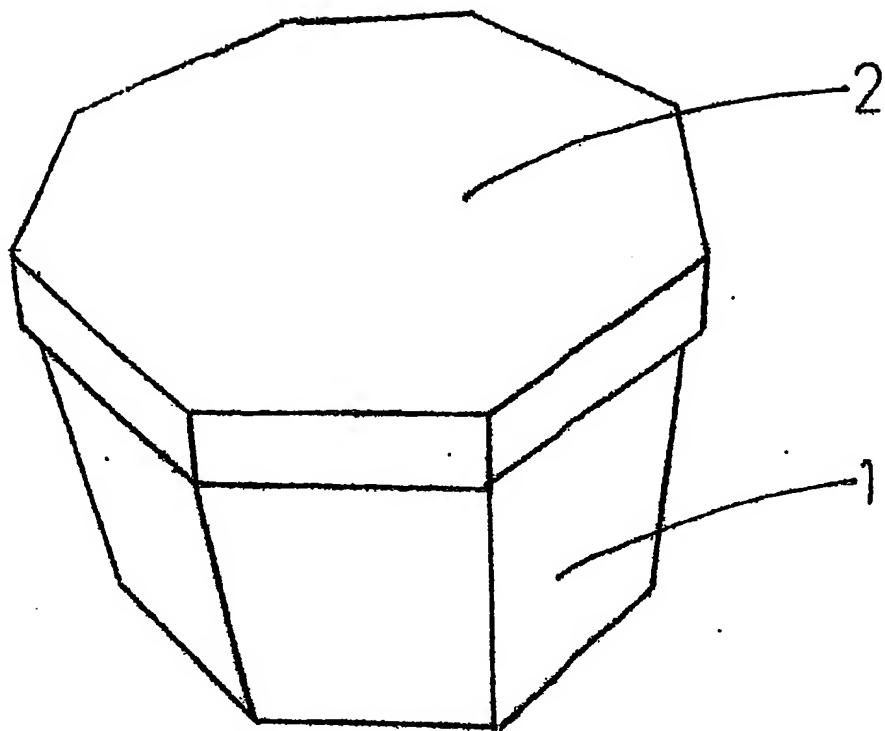


FIG1

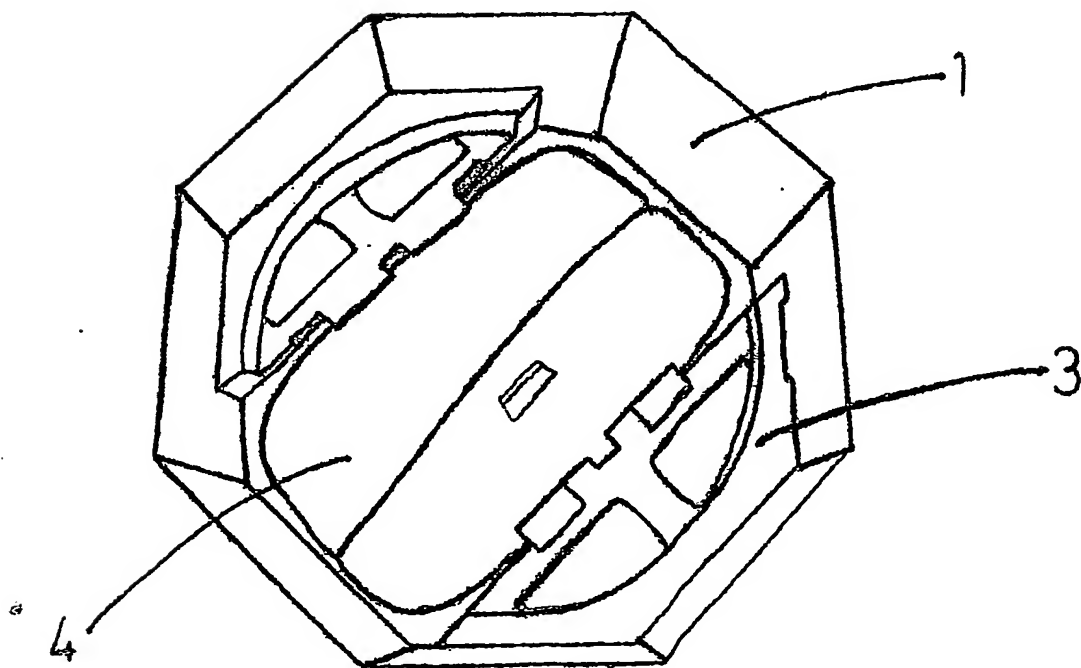


FIG2

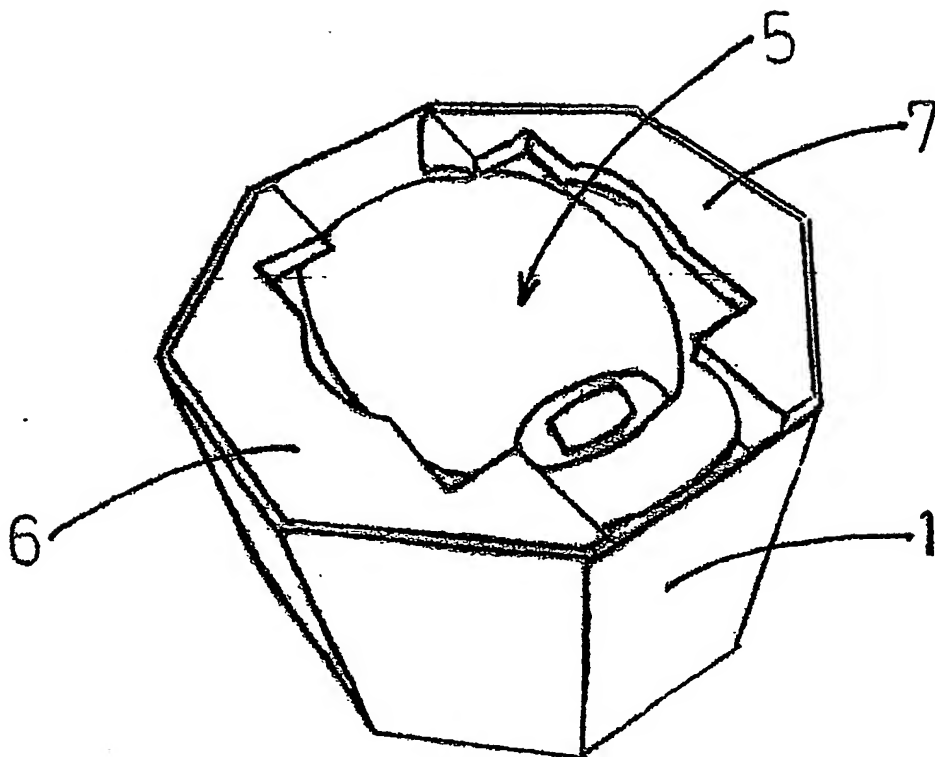


FIG 3

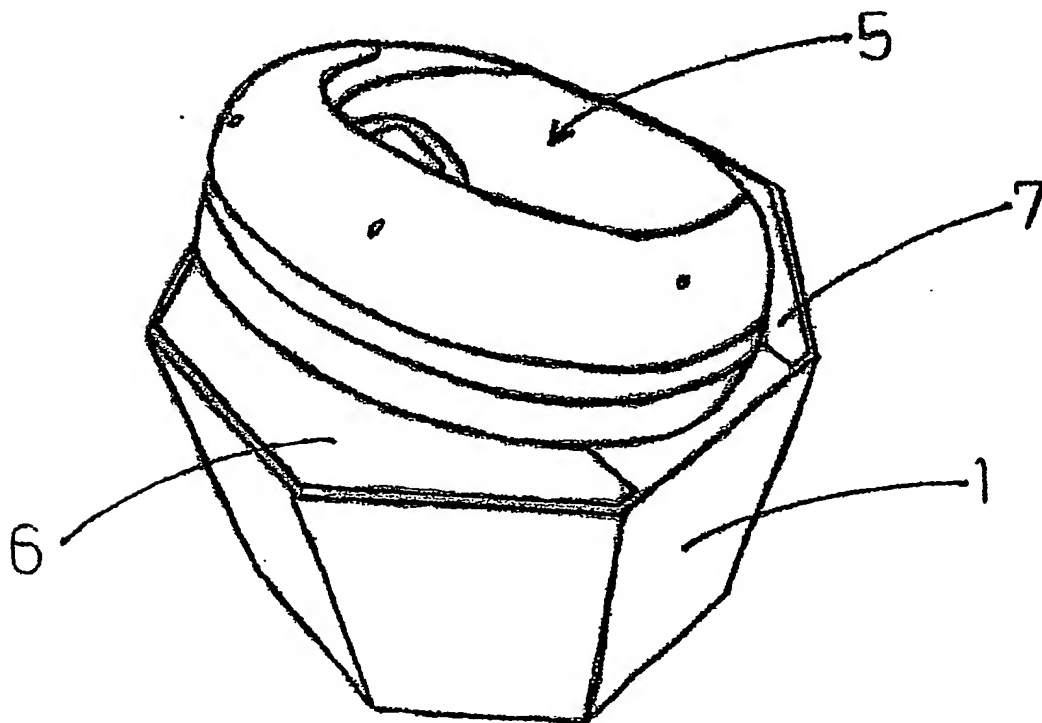


FIG 4

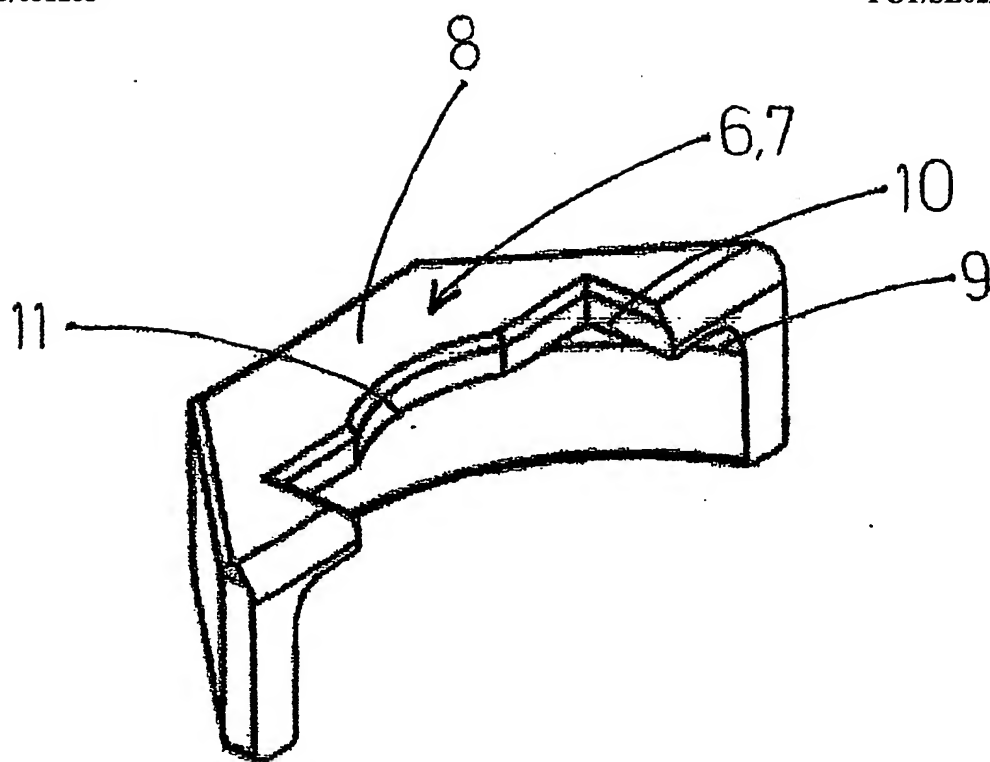


FIG 5

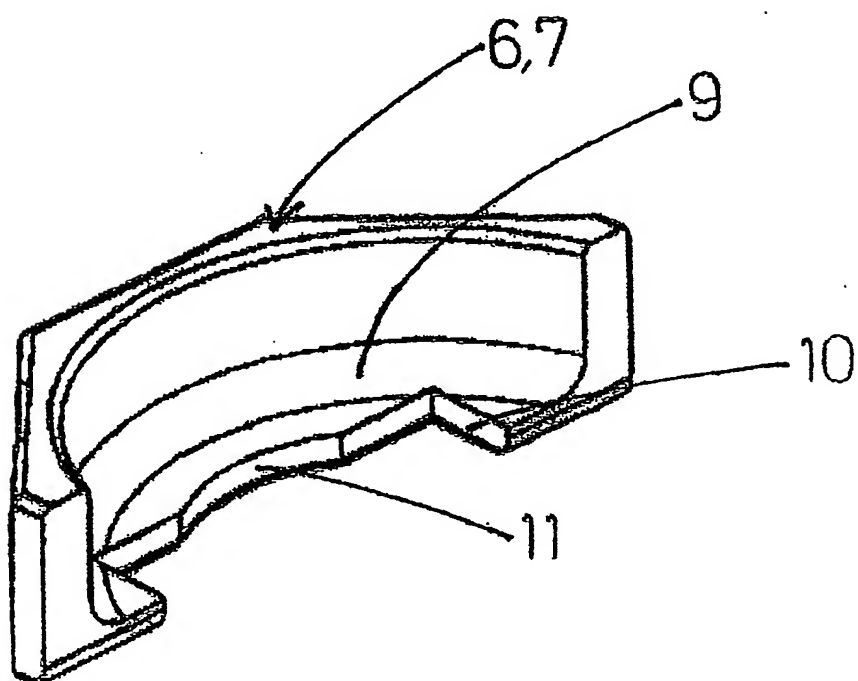


FIG 6

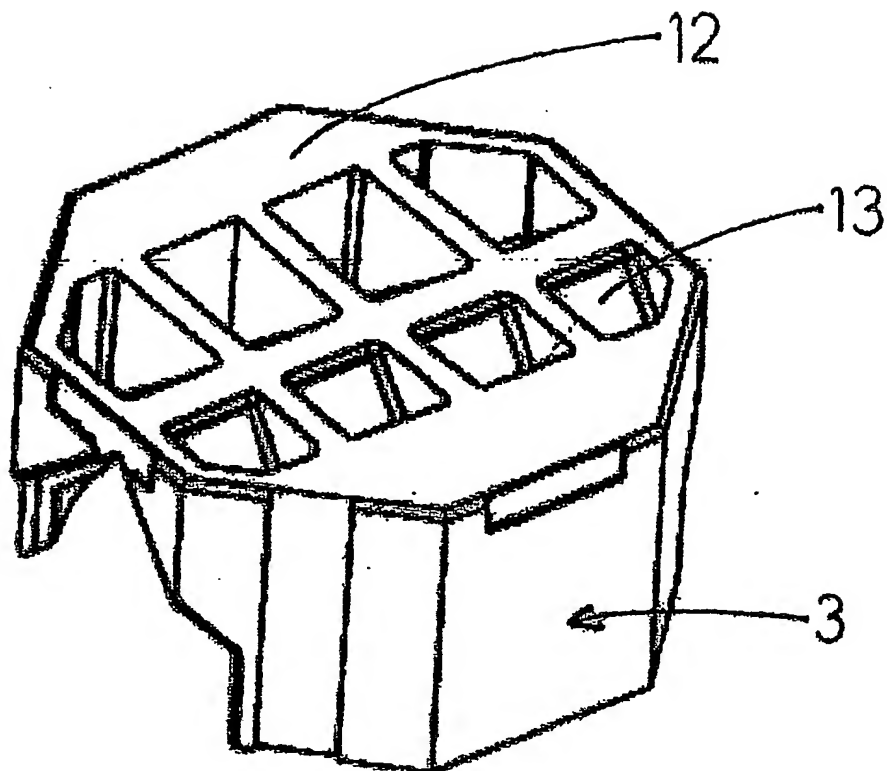


FIG 7

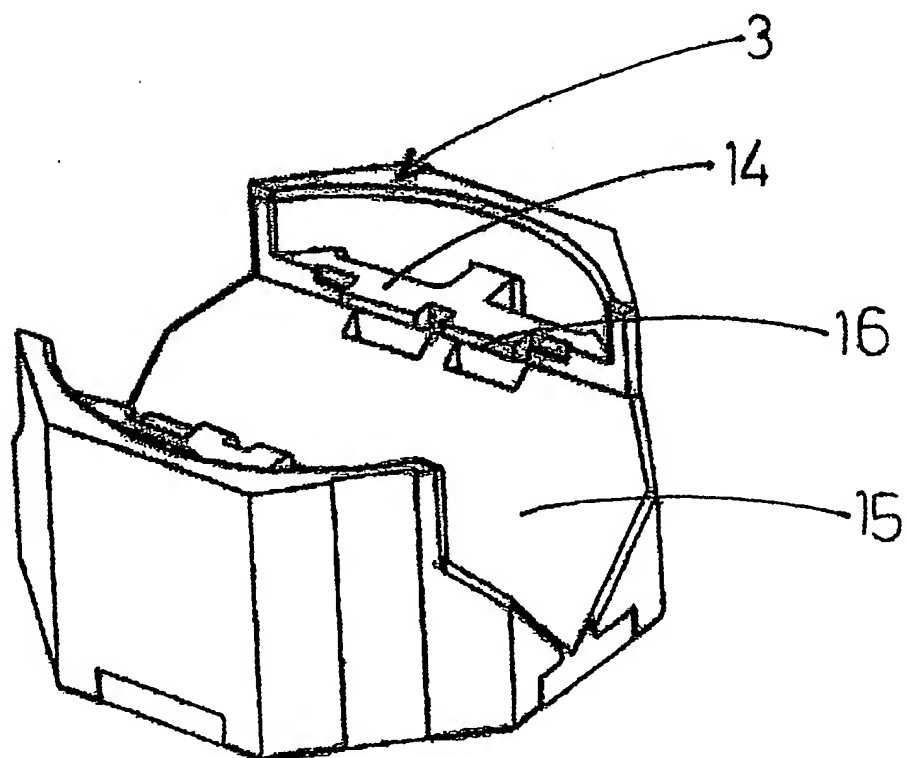


FIG 8

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 02/01768

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: B65D 85/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, PAJ, EPOQUE, INSPEC, FULLTEXT

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	DATABASE WPI Week 200164 Derwent Publications Ltd., London, GB; Class P 28, AN 2001-569359 & JP 2001240174 A (MATSUSHITA DENKI SANGYO KK), 4 September 2001 (2001-09-04) abstract, claims --	1-10
Y	PATENT ABSTRACTS OF JAPAN vol. 199, no 609, 30 September 1996 (1996-09-30) & JP 08-133378 A (FUJISAKI TOSHIKO), 28 May 1996 (1996-05-28) abstract, fig. 1 and 5 --	1-10

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

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Date of the actual completion of the international search

Date of mailing of the international search report

8 January 2003

09-01-2003

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 02/01768

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	DE 3929142 A1 (R. SEELIG & HILLE), 14 March 1991 (14.03.91), figure 1, claims 1-4 --	1-10
A	US 4026411 A (FRED J. JOHNSON), 31 May 1977 (31.05.77), figures 1-5, abstract -- -----	1-10

INTERNATIONAL SEARCH REPORT

Information on patent family members

01/12/02

International application No.

PCT/SE 02/01768

Patent document cited in search report			Publication date	Patent family member(s)	Publication date
DE	3929142	A1	14/03/91	DE 8915779 U	27/06/91
US	4026411	A	31/05/77	NONE	